CLAIMS

We Claim:

1. A power module comprising:

(a) a board having at least one element mounted thereon;

(b) at least one interconnect for electrically coupling the element to an end user's circuit card; wherein the interconnect is U-shaped.

2. The power module of Claim 1 wherein said interconnect further comprises a conductive structure having a sidewall and a contact surface.

3. The power module of Claim 2 wherein said contact surface comprises a surface having a hole there through.

4. The power module of Claim 1 wherein said board is formed from a plurality of layers.

5. The power module of Claim 1 wherein said board is formed of FR4.

6. The power module of Claim 1 wherein said power module further comprises a circuit formed on a plurality of layers.

7. The power module of Claim 1 wherein said board further comprises a surface for engagement with a pick and place machine.

8. The power module of Claim 1 wherein said at least one element is a pair of planar magnetic cores.

9. The power module of Claim 1 wherein said board is stiffened by a metallic layer within the board.

10. The power module of Claim 1 wherein said at least one interconnect comprises three interconnects that are placed to form a stable plane.

11. The power module of Claim 1 wherein a solder paste is used to couple the interconnect to the end user circuit card.

12. The power module of Claim 11 wherein a thickness of said solder paste is greater than a combined tolerance of the board, the interconnect, and the end user circuit card.

13. The power module of Claim 1 wherein said U-shaped interconnect has a side slot.

14. An interconnect for use between a power module and an end user circuit card comprising:

(a) a first sidewall;

(b) a contact surface and

(c) a second side wall, wherein the interconnect is generally U-shaped.

15. The interconnect of Claim 14 wherein said interconnect is conductive.

16. The interconnect of Claim 14 wherein said contact surface has at least one hole there through.

17. The interconnect of Claim 14 wherein the height of the first and second sidewalls are approximately identical.

18. The interconnect of Claim 14 wherein the height of the first and second sidewalls are within 2 mils of each other.

19. A power module comprising:

(a) a board having at least one element mounted thereon;

(b) at least one interconnect for electrically coupling the element to an end user's circuit card; wherein the interconnect is T-shaped.

20. The power module of Claim 19 wherein said board is formed from a plurality of layers.

21. The power module of Claim 19 wherein said board is formed of FR4.

22. The power module of Claim 19 wherein said power module further comprises a circuit formed on a plurality of layers.

23. The power module of Claim 19 wherein said board further comprises a surface for engagement with a pick and place machine.

24. The power module of Claim 19 wherein said at least one element is a pair of planar magnetic cores.

25. The power module of Claim 19 wherein said board is stiffened by a metallic layer within the board.

26. The power module of Claim 19 wherein said at least one interconnect comprises three interconnects that are placed to form a stable plane.

27. The power module of Claim 19 wherein a solder paste is used to couple the interconnect to the end user circuit card.

28. The power module of Claim 27 wherein a thickness of said solder paste is greater than a combined tolerance of the board, the interconnect, and the end user circuit card.

29. A method of coupling a power module to an end-user circuit board comprising the steps of:

(a) applying a solder paste to at least three mounting pads on said circuit board;

(b) placing a power module having at least three interconnects onto the circuit board so that the interconnects contact to solder paste; wherein a tolerance between the interconnects is absorbed in the solder paste; and

(c) heating the solder paste.

30. The method of Claim 29 wherein step (b) further comprises placing a power module having at least three U-shaped interconnects.

31. The method of Claim 29 wherein step (b) further comprises placing a power module having at least three T-shaped interconnects.